**3GPP TSG CN Plenary Meeting #18** **NP-020546**
**4th - 6th December 2002. New Orleans, USA.**

**Source:** **TSG CN WG 1**

**Title:** **CRs to R97 and R99 (with mirror CRs) on Work Item GPRS towards 04.08 and 24.008**

**Agenda item:** **7.3**

**Document for:** **APPROVAL**

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**Introduction:**

This document contains **5** CRs, **R97 with mirror CR to** Work Item **"GPRS"**, that have been agreed by **TSG CN WG1**, and are forwarded to TSG CN Plenary meeting #18 for approval.

| Spec | CR # | Rev | CAT | Rel | Tdoc Title | Meeting | TDoc # | C_Version |
|---|---|---|---|---|---|---|---|---|
| 04.08 | A1125 | | F | R97 | No MT calls after resumption of GPRS in Network Operation Mode I | N1-26 | N1-022076 | 6.19.0 |
| 04.08 | A1127 | | A | R98 | No MT calls after resumption of GPRS in Network Operation Mode I | N1-26 | N1-022077 | 7.18.0 |
| 24.008 | 695 | 1 | A | R99 | No MT calls after resumption of GPRS in Network Operation Mode I | N1-26 | N1-022062 | 3.13.0 |
| 24.008 | 696 | 1 | A | Rel-4 | No MT calls after resumption of GPRS in Network Operation Mode I | N1-26 | N1-022063 | 4.8.0 |
| 24.008 | 697 | 1 | A | Rel-5 | No MT calls after resumption of GPRS in Network Operation Mode I | N1-26 | N1-022064 | 5.5.0 |

**3GPP TSG-CN1 Meeting #26** ***Tdoc N1-022062***
**Miami Beach, Florida, USA, 23 – 27 September 2002** **Revision of N1-021948**

*CR-Form-v7*

# CHANGE REQUEST

⌘ **24.008** **CR** **695** ⌘ **rev** **1** ⌘ Current version: **3.13.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

***Proposed change affects:*** UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

| | | |
|---|---|---|
| ***Title:*** | ⌘ | No MT calls after resumption of GPRS in Network Operation Mode I |
| ***Source:*** | ⌘ | Nokia |
| ***Work item code:*** | ⌘ | GPRS |
| ***Date:*** | ⌘ | 23/09/2002 |
| ***Category:*** | ⌘ | **A** |
| ***Release:*** | ⌘ | R99 |

*Use one of the following categories:*
***F*** *(correction)*
***A*** *(corresponds to a correction in an earlier release)*
***B*** *(addition of feature),*
***C*** *(functional modification of feature)*
***D*** *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

*Use one of the following releases:*
*2 (GSM Phase 2)*
*R96 (Release 1996)*
*R97 (Release 1997)*
*R98 (Release 1998)*
*R99 (Release 1999)*
*Rel-4 (Release 4)*
*Rel-5 (Release 5)*
*Rel-6 (Release 6)*

| | | |
|---|---|---|
| ***Reason for change:*** | ⌘ | Currently 23.060 and 24.008 give contradictory requirements for the MS to perform a RAU instead of combined RAU if the network does not perform GPRS resume in NMO I. |
| ***Summary of change:*** | ⌘ | Change the MS requirement to always perform a combined RAU in NMO I if no GPRS resume indication is received. |
| ***Consequences if not approved:*** | ⌘ | Possible and already existing misunderstanding that RAU with no LU would be sufficient leaves the UE unpageable for all CS services. |

| | | |
|---|---|---|
| ***Clauses affected:*** | ⌘ | 4.7.5.2 |

| | Y | N | | | |
|---|---|---|---|---|---|
| ***Other specs affected:*** | X | | Other core specifications | ⌘ | 23.060 CR 407r2 |
| | | X | Test specifications | | |
| | | X | O&M Specifications | | |

| | | |
|---|---|---|
| ***Other comments:*** | ⌘ | The related 23.060 CR has been approved already in TSGSA #17 |

**How to create CRs using this form:**
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1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

### 4.7.1.7 Intersystem change between GSM and UMTS

For the UMTS to GSM and GSM to UMTS intersystem change the following cases can be distinguished:

a) Intersystem change between cells belonging to different RA's
The procedures executed by the MS depends on the network mode of operation in the old and new RA. If a change of the network operation mode has occurred in the new RA, then the MS shall behave as specified in clause 4.7.1.6. If no change of the network operation mode has occurred in the new RA, then the MS shall initiate the normal or combined RA update procedure depending on the network operation mode in the current RA.

b) Intersystem change between cells belonging to the same RA:

If the READY timer is running in the MS in GSM or the MS is in PMM-CONNECTED mode in UMTS, then the MS shall perform a normal or combined RA update procedure depending on the network mode of operation in the current RA.

If the READY timer is not running in the MS in GSM or the MS is in PMM-IDLE mode in UMTS, then the MS shall not perform a RA update procedure (as long as the MS stays within the same RA) until up-link user data or signalling information needs to be sent from the MS to the network.

- If the MS is in the same access network, GSM or UMTS, as when it last sent user data or signalling messages, the procedures defined for that access system shall be followed. This shall be sending of an LLC PDU in a GSM cell or initiating the SERVICE REQUEST procedure in a UMTS cell.

- If the MS is in a different access network, GSM or UMTS, as when it last sent user data or signalling messages, the normal or combined RA update procedure shall be performed depending on the network operation mode in the current RA, before the sending of user data or signalling messages. If the signalling message is a DETACH REQUEST containing cause "power off", the RA update procedure need not to be performed.

- If the periodic routing area update timer expires the MS shall initiate the periodic RA update procedure.

If the READY timer is not running in the network in GSM or the network is in PMM-IDLE mode in UMTS, then the network shall page the MS if down-link user data or signalling information needs to be sent from the network to the MS. This shall include both GSM and UMTS cells.

- If the MS receives the paging indication in the same access network, GSM or UMTS, as when it last sent user data or signalling information, the MS shall send any LLC PDU in a GSM cell or shall initiate the SERVICE REQUEST procedure indicating service type "paging response" in a UMTS cell.

- If the MS receives the paging indication in a different access network, GSM or UMTS, as when it last sent user data or signalling information, the normal or combined RA update procedure shall be performed depending on the network operation mode in the current RA.

c) Intersystem handover from GSM to UMTS during a CS connection:

After the successful completion of the handover from an GSM cell to an UMTS cell, an MS which has performed the GPRS suspension procedure in Gb mode (see 3GPP TS 04.18) (i.e. an MS in MS operation mode B or an DTM MS in a GSM cell that does not support DTM) shall perform a normal RA update procedure in the UMTS cell in order to resume the GPRS services in the network, before sending any other signalling messages or user data.

### 4.7.5.2 Combined routing area updating procedure

Within a combined routing area updating procedure the messages ROUTING AREA UPDATE ACCEPT and ROUTING AREA UPDATE COMPLETE carry information for the routing area updating and the location area updating.

#### 4.7.5.2.1 Combined routing area updating procedure initiation

The combined routing area updating procedure is initiated only by a GPRS MS operating in MS operation modes A or B, if the MS is in state GMM-REGISTERED and MM-IDLE, and if the network operates in network operation mode I:

- when a GPRS MS that is IMSI attached for GPRS and non-GPRS services detects a change of the routing area in state GMM-REGISTERED and MM-IDLE;
- when a GPRS MS that is IMSI attached for GPRS services wants to perform an IMSI attach for non-GPRS services;
- after termination of a non-GPRS service via non-GPRS channels to update the association if the MS has changed the RA during that non-GPRS service transaction;
- after termination of non-GPRS service via non-GPRS channels to update the association if GPRS services were suspended during the non-GPRS service but no resume is received. See 3GPP TS 23.060 subclause 16.2.1.
- after a CM SERVICE REJECT message with cause value #4 is received by the mobile station (see clause 4.5.1.1); in this case the update type IE shall be set to "Combined RA/LA updating with IMSI attach";
- when a GPRS MS needs to update the network with the new MS Radio Access Capability IE; or
- in UMTS, to re-synchronize the PMM mode of MS and network after RRC connection release with cause "Directed signalling connection re-establishment", see Clause 4.7.2.5.

In GSM, the routing and location area identification are broadcast on the broadcast channel(s). A combined routing area updating procedure shall abort any ongoing GMM procedure. Aborted GMM procedures shall be repeated after the combined routing area updating procedure has been successfully performed. The ROUTING AREA UPDATE REQUEST message shall always be the first message sent from the MS in the new routing area after routing area change.

In UMTS, the routing and location area identification are broadcast on the broadcast channel(s) or sent to the MS via the PS signaling connection. A combined routing area updating procedure shall abort any ongoing GMM procedure. Aborted GMM procedures may be repeated after the combined routing area updating procedure has been successfully performed. The ROUTING AREA UPDATE REQUEST message shall always be the first GMM message sent from the MS in the new routing area after routing area change.

To initiate a combined routing area updating procedure the MS sends the message ROUTING AREA UPDATE REQUEST to the network, starts timer T3330 and changes to state GMM-ROUTING-UPDATING-INITIATED and MM LOCATION UPDATING PENDING. The value of the update type IE in the message shall indicate "combined RA/LA updating". If for the last attempt to update the registration of the location area a MM specific procedure was performed, the value of the update type IE in the ROUTING AREA UPDATE REQUEST message shall indicate "combined RA/LA updating with IMSI attach". Furthermore the MS shall include the TMSI status IE if no valid TMSI is available.

A GPRS MS in MS operation modes A or B that is in an ongoing circuit-switched transaction, shall initiate the combined routing area updating procedure after the circuit-switched transaction has been released, if the MS has changed the RA during the circuit-switched transaction and if the network operates in network operation mode I.

A GPRS MS in MS operation mode A shall initiate the combined routing area updating procedure with IMSI attach after the circuit-switched transaction has been released if a GPRS attach was performed during the circuit-switched transaction and provided that the network operates in network operation mode I.

A GPRS MS in MS operation mode A shall perform the normal routing area update procedure during an ongoing circuit-switched transaction.

In UMTS, if the MS wishes to prolong the established PS signalling connection after the normal routing area updating procedure when it is served under UMTS area, it may set a follow-on request pending indicator on.

In UMTS, when a ROUTING AREA UPDATE REQUEST is received by the SGSN over a new PS signalling connection while there is an ongoing PS signalling connection (network is already in mode PMM-CONNECTED) for this UE, the network shall progress the routing area update procedure as normal and release the previous PS signalling connection when the routing area update procedure has been accepted by the network .

NOTE: The re-establishment of the radio bearers of active PDP contexts is done as described in clause "Service Request procedure".

**3GPP TSG-CN1 Meeting #26** ***Tdoc N1-022063***
**Miami Beach, Florida, USA, 23 – 27 September 2002** **Revision of N1-021949**

*CR-Form-v7*

# CHANGE REQUEST

⌘ **24.008** **CR** **696** ⌘ **rev** **1** ⌘ Current version: **4.8.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

***Proposed change affects:*** UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

| | | |
|---|---|---|
| ***Title:*** | ⌘ | No MT calls after resumption of GPRS in Network Operation Mode I |
| ***Source:*** | ⌘ | Nokia |
| ***Work item code:*** | ⌘ | GPRS |
| ***Date:*** | ⌘ | 26/09/2002 |
| ***Category:*** | ⌘ | **A** |
| ***Release:*** | ⌘ | Rel-4 |

*Use one of the following categories:*
***F*** *(correction)*
***A*** *(corresponds to a correction in an earlier release)*
***B*** *(addition of feature),*
***C*** *(functional modification of feature)*
***D*** *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

*Use one of the following releases:*

| | |
|---|---|
| *2* | *(GSM Phase 2)* |
| *R96* | *(Release 1996)* |
| *R97* | *(Release 1997)* |
| *R98* | *(Release 1998)* |
| *R99* | *(Release 1999)* |
| *Rel-4* | *(Release 4)* |
| *Rel-5* | *(Release 5)* |
| *Rel-6* | *(Release 6)* |

| | | |
|---|---|---|
| ***Reason for change:*** | ⌘ | Currently 23.060 and 24.008 give contradictory requirements for the MS to perform a RAU instead of combined RAU if the network does not perform GPRS resume in NMO I. |
| ***Summary of change:*** | ⌘ | Change the MS requirement to always perform a combined RAU in NMO I if no GPRS resume indication is received. |
| ***Consequences if not approved:*** | ⌘ | Possible and already implemented misunderstanding that RAU with no LU would be sufficient leaves the UE unpageable for all CS services. |

| | | |
|---|---|---|
| ***Clauses affected:*** | ⌘ | 4.7.5.2 |

| | Y | N | | | |
|---|---|---|---|---|---|
| ***Other specs affected:*** | X | | Other core specifications | ⌘ | 23.060 |
| | | X | Test specifications | | |
| | | X | O&M Specifications | | |

| | | |
|---|---|---|
| ***Other comments:*** | ⌘ | The related 23.060 CR has been approved already in TSGSA #17 |

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### 4.7.5.2 Combined routing area updating procedure

Within a combined routing area updating procedure the messages ROUTING AREA UPDATE ACCEPT and ROUTING AREA UPDATE COMPLETE carry information for the routing area updating and the location area updating.

#### 4.7.5.2.1 Combined routing area updating procedure initiation

The combined routing area updating procedure is initiated only by a GPRS MS operating in MS operation modes A or B, if the MS is in state GMM-REGISTERED and MM-IDLE, and if the network operates in network operation mode I:

- when a GPRS MS that is IMSI attached for GPRS and non-GPRS services detects a change of the routing area in state GMM-REGISTERED and MM-IDLE;

- when a GPRS MS that is IMSI attached for GPRS services wants to perform an IMSI attach for non-GPRS services;

- after termination of a non-GPRS service via non-GPRS channels to update the association if the MS has changed the RA during that non-GPRS service transaction;

- after termination of non-GPRS service via non-GPRS channels to update the association if GPRS services were suspended during the non-GPRS service but no resume is received. See 3GPP TS 23.060 subclause 16.2.1.

- after a CM SERVICE REJECT message with cause value #4 is received by the mobile station (see subclause 4.5.1.1); in this case the update type IE shall be set to "Combined RA/LA updating with IMSI attach";

- when a GPRS MS needs to update the network with the new MS Radio Access Capability IE; or

- in UMTS, to re-synchronize the PMM mode of MS and network after RRC connection release with cause "Directed signalling connection re-establishment", see subclause 4.7.2.5.

In GSM, the routing and location area identification are broadcast on the broadcast channel(s). A combined routing area updating procedure shall abort any ongoing GMM procedure. Aborted GMM procedures shall be repeated after the combined routing area updating procedure has been successfully performed. The ROUTING AREA UPDATE REQUEST message shall always be the first message sent from the MS in the new routing area after routing area change.

In UMTS, the routing and location area identification are broadcast on the broadcast channel(s) or sent to the MS via the PS signaling connection. A combined routing area updating procedure shall abort any ongoing GMM procedure. Aborted GMM procedures may be repeated after the combined routing area updating procedure has been successfully performed. The ROUTING AREA UPDATE REQUEST message shall always be the first GMM message sent from the MS in the new routing area after routing area change.

To initiate a combined routing area updating procedure the MS sends the message ROUTING AREA UPDATE REQUEST to the network, starts timer T3330 and changes to state GMM-ROUTING-UPDATING-INITIATED and MM LOCATION UPDATING PENDING. The value of the update type IE in the message shall indicate "combined RA/LA updating". If for the last attempt to update the registration of the location area a MM specific procedure was performed, the value of the update type IE in the ROUTING AREA UPDATE REQUEST message shall indicate "combined RA/LA updating with IMSI attach". Furthermore the MS shall include the TMSI status IE if no valid TMSI is available.

A GPRS MS in MS operation modes A or B that is in an ongoing circuit-switched transaction, shall initiate the combined routing area updating procedure after the circuit-switched transaction has been released, if the MS has changed the RA during the circuit-switched transaction and if the network operates in network operation mode I.

A GPRS MS in MS operation mode A shall initiate the combined routing area updating procedure with IMSI attach after the circuit-switched transaction has been released if a GPRS attach was performed during the circuit-switched transaction and provided that the network operates in network operation mode I.

A GPRS MS in MS operation mode A shall perform the normal routing area update procedure during an ongoing circuit-switched transaction.

In UMTS, if the MS wishes to prolong the established PS signalling connection after the normal routing area updating procedure when it is served under UMTS area, it may set a follow-on request pending indicator on.

In UMTS, when a ROUTING AREA UPDATE REQUEST is received by the SGSN over a new PS signalling connection while there is an ongoing PS signalling connection (network is already in mode PMM-CONNECTED) for this UE, the network shall progress the routing area update procedure as normal and release the previous PS signalling connection when the routing area update procedure has been accepted by the network.

NOTE: The re-establishment of the radio bearers of active PDP contexts is done as described in subclause "Service Request procedure".

**3GPP TSG-CN1 Meeting #26** ***Tdoc N1-022064***
**Miami Beach, Florida, USA, 23 – 27 September 2002** **Revision of N1-021950**

*CR-Form-v7*

# CHANGE REQUEST

⌘ **24.008** **CR** **697** ⌘ **rev** **1** ⌘ Current version: **5.5.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

***Proposed change affects:*** UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

| | | |
|---|---|---|
| ***Title:*** | ⌘ | No MT calls after resumption of GPRS in Network Operation Mode I |
| ***Source:*** | ⌘ | Nokia |
| ***Work item code:*** | ⌘ | GPRS |
| ***Date:*** | ⌘ | 26/09/2002 |
| ***Category:*** | ⌘ | **A** |
| ***Release:*** | ⌘ | Rel-5 |

*Use one of the following categories:*
***F*** *(correction)*
***A*** *(corresponds to a correction in an earlier release)*
***B*** *(addition of feature),*
***C*** *(functional modification of feature)*
***D*** *(editorial modification)*
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*Use one of the following releases:*

| | |
|---|---|
| *2* | *(GSM Phase 2)* |
| *R96* | *(Release 1996)* |
| *R97* | *(Release 1997)* |
| *R98* | *(Release 1998)* |
| *R99* | *(Release 1999)* |
| *Rel-4* | *(Release 4)* |
| *Rel-5* | *(Release 5)* |
| *Rel-6* | *(Release 6)* |

| | | |
|---|---|---|
| ***Reason for change:*** | ⌘ | Currently 23.060 and 24.008 give contradictory requirements for the MS to perform a RAU instead of combined RAU if the network does not perform GPRS resume in NMO I. |
| ***Summary of change:*** | ⌘ | Change the MS requirement to always perform a combined RAU in NMO I if no GPRS resume indication is received. |
| ***Consequences if not approved:*** | ⌘ | Possible and already existing misunderstanding that RAU with no LU would be sufficient leaves the UE unpageable for all CS services. |

| | | |
|---|---|---|
| ***Clauses affected:*** | ⌘ | 4.7.5.2 |

| | Y | N | | | |
|---|---|---|---|---|---|
| ***Other specs affected:*** | X | | Other core specifications | ⌘ | 23.060 |
| | | X | Test specifications | | |
| | | X | O&M Specifications | | |

| | | |
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| ***Other comments:*** | ⌘ | The related 23.060 CR has been approved already in TSGSA #17 |

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### 4.7.5.2 Combined routing area updating procedure

Within a combined routing area updating procedure the messages ROUTING AREA UPDATE ACCEPT and ROUTING AREA UPDATE COMPLETE carry information for the routing area updating and the location area updating.

#### 4.7.5.2.1 Combined routing area updating procedure initiation

The combined routing area updating procedure is initiated only by a GPRS MS operating in MS operation modes A or B, if the MS is in state GMM-REGISTERED and MM-IDLE, and if the network operates in network operation mode I:

- when a GPRS MS that is IMSI attached for GPRS and non-GPRS services detects a change of the routing area in state GMM-REGISTERED and MM-IDLE;

- when a GPRS MS that is IMSI attached for GPRS services wants to perform an IMSI attach for non-GPRS services;

- after termination of a non-GPRS service via non-GPRS channels to update the association if the MS has changed the RA during that non-GPRS service transaction;

- after termination of non-GPRS service via non-GPRS channels to update the association if GPRS services were suspended during the non-GPRS service but no resume is received. See 3GPP TS 23.060 subclause 16.2.1.

- after a CM SERVICE REJECT message with cause value #4 is received by the mobile station (see subclause 4.5.1.1); in this case the update type IE shall be set to "Combined RA/LA updating with IMSI attach";

- when a GPRS MS needs to update the network with the new MS Radio Access Capability IE; or

- in UMTS, to re-synchronize the PMM mode of MS and network after RRC connection release with cause "Directed signalling connection re-establishment", see subclause 4.7.2.5.

In GSM, the routing and location area identification are broadcast on the broadcast channel(s). A combined routing area updating procedure shall abort any ongoing GMM procedure. Aborted GMM procedures shall be repeated after the combined routing area updating procedure has been successfully performed. The ROUTING AREA UPDATE REQUEST message shall always be the first message sent from the MS in the new routing area after routing area change.

In UMTS, the routing and location area identification are broadcast on the broadcast channel(s) or sent to the MS via the PS signaling connection. A combined routing area updating procedure shall abort any ongoing GMM procedure. Aborted GMM procedures may be repeated after the combined routing area updating procedure has been successfully performed. The ROUTING AREA UPDATE REQUEST message shall always be the first GMM message sent from the MS in the new routing area after routing area change.

To initiate a combined routing area updating procedure the MS sends the message ROUTING AREA UPDATE REQUEST to the network, starts timer T3330 and changes to state GMM-ROUTING-UPDATING-INITIATED and MM LOCATION UPDATING PENDING. The value of the update type IE in the message shall indicate "combined RA/LA updating". If for the last attempt to update the registration of the location area a MM specific procedure was performed, the value of the update type IE in the ROUTING AREA UPDATE REQUEST message shall indicate "combined RA/LA updating with IMSI attach". Furthermore the MS shall include the TMSI status IE if no valid TMSI is available.

A GPRS MS in MS operation modes A or B that is in an ongoing circuit-switched transaction, shall initiate the combined routing area updating procedure after the circuit-switched transaction has been released, if the MS has changed the RA during the circuit-switched transaction and if the network operates in network operation mode I.

A GPRS MS in MS operation mode A shall initiate the combined routing area updating procedure with IMSI attach after the circuit-switched transaction has been released if a GPRS attach was performed during the circuit-switched transaction and provided that the network operates in network operation mode I.

A GPRS MS in MS operation mode A shall perform the normal routing area update procedure during an ongoing circuit-switched transaction.

In UMTS, if the MS wishes to prolong the established PS signalling connection after the normal routing area updating procedure when it is served under UMTS area, it may set a follow-on request pending indicator on.

In UMTS, when a ROUTING AREA UPDATE REQUEST is received by the SGSN over a new PS signalling connection while there is an ongoing PS signalling connection (network is already in mode PMM-CONNECTED) for this UE, the network shall progress the routing area update procedure as normal and release the previous PS signalling connection when the routing area update procedure has been accepted by the network.

NOTE: The re-establishment of the radio bearers of active PDP contexts is done as described in subclause "Service Request procedure".

**3GPP TSG-CN1 Meeting #26** ***Tdoc N1-022076***
**Miami Beach, Florida, USA, 23 – 27 September 2002**

CR-Form-v7

# CHANGE REQUEST

⌘ **04.08** **CR** **A1125** ⌘ **rev** ⌘ Current version: **6.19.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

***Proposed change affects:*** UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

| | | |
|---|---|---|
| ***Title:*** | ⌘ | No MT calls after resumption of GPRS in Network Operation Mode I |
| ***Source:*** | ⌘ | Nokia |
| ***Work item code:*** | ⌘ | GPRS |
| ***Date:*** | ⌘ | 26/09/2002 |
| ***Category:*** | ⌘ | **F** |
| ***Release:*** | ⌘ | R97 |

*Use one of the following categories:*
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*R96 (Release 1996)*
*R97 (Release 1997)*
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*R99 (Release 1999)*
*Rel-4 (Release 4)*
*Rel-5 (Release 5)*
*Rel-6 (Release 6)*

| | | |
|---|---|---|
| ***Reason for change:*** | ⌘ | Currently 03.60 and 04.08 give contradictory requirements for the MS to perform a RAU instead of combined RAU if the network does not perform GPRS resume in NMO I. |
| ***Summary of change:*** | ⌘ | Change the MS requirement to always perform a combined RAU in NMO I if no GPRS resume indication is received. |
| ***Consequences if not approved:*** | ⌘ | Possible and already existing misunderstanding that RAU with no LU would be sufficient leaves the UE unpageable for all CS services. |

| | | |
|---|---|---|
| ***Clauses affected:*** | ⌘ | 4.7.5.2 |

| ***Other specs affected:*** ⌘ | Y | N | | ⌘ |
|---|---|---|---|---|
| | X | | Other core specifications | 03.60 |
| | | X | Test specifications | |
| | | X | O&M Specifications | |

| | | |
|---|---|---|
| ***Other comments:*** | ⌘ | The related 03.60 CR has been approved already in TSGSA #17 |

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### 4.7.5.2 Combined routing area updating procedure

Within a combined routing area updating procedure the messages ROUTING AREA UPDATE ACCEPT and ROUTING AREA UPDATE COMPLETE carry information for the routing area updating and the location area updating.

#### 4.7.5.2.1 Combined routing area updating procedure initiation

The combined routing area updating procedure is initiated only by a GPRS MS operating in MS operation modes A or B, if the MS is in state GMM-REGISTERED and if the network operates in network operation mode I:

- when a GPRS MS that is IMSI attached for GPRS and non-GPRS services detects a change of the routing area in state GMM-REGISTERED and MM-IDLE;

- when a GPRS MS that is IMSI attached for GPRS services wants to perform an IMSI attach for non-GPRS services;

- after termination of a non-GPRS service via non-GPRS channels to update the association if the MS has changed the LA during that non-GPRS service transaction;

- after termination of non-GPRS service via non-GPRS channels to update the association if GPRS services were suspended during the non-GPRS service but no resume is received. See TS GSM 03.60 subclause 16.2.1.

- after a CM SERVICE REJECT message with cause value #4 is received by the mobile station (see section 4.5.1.1), in which case the update type IE shall be set to "Combined RA/LA updating with IMSI attach"; or

- when a GPRS MS needs to update the network with the new MS Radio Access Capability IE.

The routing and location area identification are broadcast on the broadcast channel(s). A combined routing area updating procedure shall abort any ongoing GMM procedure. Aborted GMM procedures shall be repeated after the combined routing area updating procedure has been successfully performed. The ROUTING AREA UPDATE REQUEST message shall always be the first message sent from the MS in the new routing area after routing area change.

To initiate a combined routing area updating procedure the MS sends the message ROUTING AREA UPDATE REQUEST to the network, starts timer T3330 and changes to state GMM-ROUTING-UPDATING-INITIATED and MM LOCATION UPDATING PENDING. The value of the update type IE in the message shall indicate “combined RA/LA updating”. If for the last attempt to update the registration of the location area a MM specific procedure was performed, the value of the update type IE in the ROUTING AREA UPDATE REQUEST message shall indicate “combined RA/LA updating with IMSI attach”. Furthermore the MS shall include the TMSI status IE if no valid TMSI is available.A GPRS MS in MS operation modes A or B that is in an ongoing circuit-switched transaction, shall initiate the combined routing area updating procedure after the circuit-switched transaction has been released, if the MS has changed the RA during the circuit-switched transaction and if the network operates in network operation mode I.

A GPRS MS in MS operation mode A shall initiate the combined routing area updating procedure with IMSI attach after the circuit-switched transaction has been released if a GPRS attach was performed during the circuit-switched transaction and provided that the network operates in network operation mode I.

A GPRS MS in MS operation mode A shall perform the normal routing area update procedure during an ongoing circuit-switched transaction.

### 4.7.5.2 Combined routing area updating procedure

Within a combined routing area updating procedure the messages ROUTING AREA UPDATE ACCEPT and ROUTING AREA UPDATE COMPLETE carry information for the routing area updating and the location area updating.

#### 4.7.5.2.1 Combined routing area updating procedure initiation

The combined routing area updating procedure is initiated only by a GPRS MS operating in MS operation modes A or B, if the MS is in state GMM-REGISTERED and MM-IDLE, and if the network operates in network operation mode I:

- when a GPRS MS that is IMSI attached for GPRS and non-GPRS services detects a change of the routing area in state GMM-REGISTERED and MM-IDLE;
- when a GPRS MS that is IMSI attached for GPRS services wants to perform an IMSI attach for non-GPRS services;
- after termination of a non-GPRS service via non-GPRS channels to update the association if the MS has changed the RA during that non-GPRS service transaction;
- after termination of non-GPRS service via non-GPRS channels to update the association if GPRS services were suspended during the non-GPRS service but no resume is received. See 3GPP TS 23.060 subclause 16.2.1.
- after a CM SERVICE REJECT message with cause value #4 is received by the mobile station (see clause 4.5.1.1); in this case the update type IE shall be set to "Combined RA/LA updating with IMSI attach";
- when a GPRS MS needs to update the network with the new MS Radio Access Capability IE; or
- in UMTS, to re-synchronize the PMM mode of MS and network after RRC connection release with cause "Directed signalling connection re-establishment", see Clause 4.7.2.5.

In GSM, the routing and location area identification are broadcast on the broadcast channel(s). A combined routing area updating procedure shall abort any ongoing GMM procedure. Aborted GMM procedures shall be repeated after the combined routing area updating procedure has been successfully performed. The ROUTING AREA UPDATE REQUEST message shall always be the first message sent from the MS in the new routing area after routing area change.

In UMTS, the routing and location area identification are broadcast on the broadcast channel(s) or sent to the MS via the PS signaling connection. A combined routing area updating procedure shall abort any ongoing GMM procedure. Aborted GMM procedures may be repeated after the combined routing area updating procedure has been successfully performed. The ROUTING AREA UPDATE REQUEST message shall always be the first GMM message sent from the MS in the new routing area after routing area change.

To initiate a combined routing area updating procedure the MS sends the message ROUTING AREA UPDATE REQUEST to the network, starts timer T3330 and changes to state GMM-ROUTING-UPDATING-INITIATED and MM LOCATION UPDATING PENDING. The value of the update type IE in the message shall indicate "combined RA/LA updating". If for the last attempt to update the registration of the location area a MM specific procedure was performed, the value of the update type IE in the ROUTING AREA UPDATE REQUEST message shall indicate "combined RA/LA updating with IMSI attach". Furthermore the MS shall include the TMSI status IE if no valid TMSI is available.

A GPRS MS in MS operation modes A or B that is in an ongoing circuit-switched transaction, shall initiate the combined routing area updating procedure after the circuit-switched transaction has been released, if the MS has changed the RA during the circuit-switched transaction and if the network operates in network operation mode I.

A GPRS MS in MS operation mode A shall initiate the combined routing area updating procedure with IMSI attach after the circuit-switched transaction has been released if a GPRS attach was performed during the circuit-switched transaction and provided that the network operates in network operation mode I.

A GPRS MS in MS operation mode A shall perform the normal routing area update procedure during an ongoing circuit-switched transaction.

In UMTS, if the MS wishes to prolong the established PS signalling connection after the normal routing area updating procedure when it is served under UMTS area, it may set a follow-on request pending indicator on.

In UMTS, when a ROUTING AREA UPDATE REQUEST is received by the SGSN over a new PS signalling connection while there is an ongoing PS signalling connection (network is already in mode PMM-CONNECTED) for this UE, the network shall progress the routing area update procedure as normal and release the previous PS signalling connection when the routing area update procedure has been accepted by the network .

NOTE: The re-establishment of the radio bearers of active PDP contexts is done as described in clause "Service Request procedure".

**3GPP TSG-CN1 Meeting #26** ***Tdoc N1-022077***
**Miami Beach, Florida, USA, 23 – 27 September 2002**

CR-Form-v7

# CHANGE REQUEST

⌘ **04.08** **CR** **A1127** ⌘ **rev** ⌘ Current version: **7.18.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

***Proposed change affects:*** UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

| | | |
|---|---|---|
| ***Title:*** | ⌘ | No MT calls after resumption of GPRS in Network Operation Mode I |
| ***Source:*** | ⌘ | Nokia |
| ***Work item code:*** | ⌘ | GPRS |
| ***Date:*** | ⌘ | 26/09/2002 |
| ***Category:*** | ⌘ | **A** |
| ***Release:*** | ⌘ | R98 |

*Use one of the following categories:*
***F*** *(correction)*
***A*** *(corresponds to a correction in an earlier release)*
***B*** *(addition of feature),*
***C*** *(functional modification of feature)*
***D*** *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

*Use one of the following releases:*
*2 (GSM Phase 2)*
*R96 (Release 1996)*
*R97 (Release 1997)*
*R98 (Release 1998)*
*R99 (Release 1999)*
*Rel-4 (Release 4)*
*Rel-5 (Release 5)*
*Rel-6 (Release 6)*

| | | |
|---|---|---|
| ***Reason for change:*** | ⌘ | Currently 03.60 and 04.08 give contradictory requirements for the MS to perform a RAU instead of combined RAU if the network does not perform GPRS resume in NMO I. |
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| | | |
|---|---|---|
| ***Clauses affected:*** | ⌘ | 4.7.5.2 |

| | | Y | N | | | |
|---|---|---|---|---|---|---|
| ***Other specs Affected:*** | ⌘ | X | | Other core specifications | ⌘ | 03.60 |
| | | | X | Test specifications | | |
| | | | X | O&M Specifications | | |

| | | |
|---|---|---|
| ***Other comments:*** | ⌘ | The related 03.60 CR has been approved already in TSGSA #17 |

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### 4.7.5.2 Combined routing area updating procedure

Within a combined routing area updating procedure the messages ROUTING AREA UPDATE ACCEPT and ROUTING AREA UPDATE COMPLETE carry information for the routing area updating and the location area updating.

#### 4.7.5.2.1 Combined routing area updating procedure initiation

The combined routing area updating procedure is initiated only by a GPRS MS operating in MS operation modes A or B, if the MS is in state GMM-REGISTERED and if the network operates in network operation mode I:

- when a GPRS MS that is IMSI attached for GPRS and non-GPRS services detects a change of the routing area in state GMM-REGISTERED and MM-IDLE;

- when a GPRS MS that is IMSI attached for GPRS services wants to perform an IMSI attach for non-GPRS services;

- after termination of a non-GPRS service via non-GPRS channels to update the association if the MS has changed the LA during that non-GPRS service transaction;

- after termination of non-GPRS service via non-GPRS channels to update the association if GPRS services were suspended during the non-GPRS service but no resume is received. See TS GSM 03.60 subclause 16.2.1.

- after a CM SERVICE REJECT message with cause value #4 is received by the mobile station (see clause 4.5.1.1), in which case the update type IE shall be set to "Combined RA/LA updating with IMSI attach"; or

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The routing and location area identification are broadcast on the broadcast channel(s). A combined routing area updating procedure shall abort any ongoing GMM procedure. Aborted GMM procedures shall be repeated after the combined routing area updating procedure has been successfully performed. The ROUTING AREA UPDATE REQUEST message shall always be the first message sent from the MS in the new routing area after routing area change.

To initiate a combined routing area updating procedure the MS sends the message ROUTING AREA UPDATE REQUEST to the network, starts timer T3330 and changes to state GMM-ROUTING-UPDATING-INITIATED and MM LOCATION UPDATING PENDING. The value of the update type IE in the message shall indicate "combined RA/LA updating". If for the last attempt to update the registration of the location area a MM specific procedure was performed, the value of the update type IE in the ROUTING AREA UPDATE REQUEST message shall indicate "combined RA/LA updating with IMSI attach". Furthermore the MS shall include the TMSI status IE if no valid TMSI is available.

A GPRS MS in MS operation modes A or B that is in an ongoing circuit-switched transaction, shall initiate the combined routing area updating procedure after the circuit-switched transaction has been released, if the MS has changed the RA during the circuit-switched transaction and if the network operates in network operation mode I.

A GPRS MS in MS operation mode A shall initiate the combined routing area updating procedure with IMSI attach after the circuit-switched transaction has been released if a GPRS attach was performed during the circuit-switched transaction and provided that the network operates in network operation mode I.

A GPRS MS in MS operation mode A shall perform the normal routing area update procedure during an ongoing circuit-switched transaction.